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ABSTRACT

Witnessing the radical changes in business environment and the innovative progress in technology today, organizations are increasing their investment in information technology (IT) and taking more interest in people in charge of information systems (IS) departments. The roles of IS leaders are changing, so that they need not only technical expertise, but also managerial skills and visionary leadership. This article provides a better understanding on the changing roles of IS executives especially in light of leadership skills and personality characteristics. A research model and hypotheses to be tested are presented. The methodology for the proposed study encompasses both micro and macro views in that it focuses on the individual Chief Information Officer (CIO) in the organization, along with the impact of changes in IT on that individual, and the impact of the behavior of the individual on the organization's overall performance. Leadership behavior, personality characteristics, and IS executives' effectiveness will be measured using questionnaires. (Author/AEF)

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NEW ROLES OF IS EXECUTIVES: A LEADERSHIP PERSPECTIVE

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ED 422 951

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Witnessing the radical changes in business environment and the innovative progress in technology today, organizations are increasing investment in IT and having more interest in people in charge of IS department. Definitely the roles of IS leaders are changing, and should be changed otherwise, toward the way they be well equipped not only with technical expertise but also with managerial skills and visionary leadership. Despite the recent increasing number of literature works on organization, leadership, or even CIO, it was hard to find studies which deal strictly and clearly with the changing roles of IS executives and their personal characteristics.

This article in progress is prepared to give a better understanding on the changing roles of IS executives, especially in light of the leadership skills and personality characteristics. The methodology applied here encompasses both the micro and macro views in that the study focuses on the individual, CIO, in the organization, along with the impact of changes in IT on that individual, and the impact of the behavior of the individual on the organizations overall performance as well.

INTRODUCTION

As information technology evolves, so do the management challenges and opportunities associated with it. The sharp decline in the cost of computing and the democratization of Information Systems (IS) have dramatically transformed the business use of Information Technology (IT) and inexorably altered the terms of competition in entire industries. Dynamic changes in markets, new demands from the consumer, and a stream of innovative technology applications have placed unprecedented demand on the leaders and managers of companies throughout the global economy, forcing them to redefine their most basic operating premises and reshape their organizations.

To cope with these changes, many organizations use IT quantitatively more and qualitatively differently. With this changing role of ITs in organizations, the role of IS executives, sometimes called Chief Information Officers (CIO), in organizations also should be changed. As Applegate and Elam (1992) point out, while in the "data processing era" of the 1960s, when IT served strictly support functions, it was acceptable for the IS leader to be a technical expert or competent manager. In the "information era of the 1990s", a new and expanded set of responsibilities demands that the IS executives also possess strong leadership skills, power, and business expertise. Since Ives and Olson (1981) called for management, and not technical, roles of IS leaders, a substantial body of research about the managerial role of the IS leader has begun to emerge. Until recently, however, IS executives assumed the role of functional managers who take the responsibility of selecting, managing, and maintaining IT. With the changing role of IT in organizations, however, IS executives must play a key role in adopting new technology, articulating visions of new organizations based upon new IT, changing the organization, and transforming people who are usually reluctant to change. Competent IS executives have become more important than ever before.

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Despite the increasing importance of IS executives, however, there have been few studies on their changing roles. Furthermore, most existing studies on IS executives are lacking in theory. These studies describe new IS executives rather vaguely whereas organizations need specific guidance to recruit for one of their most critical positions.

Recent theoretical developments in leadership on "charismatic", "visionary", or "transformational" leadership shed some lights on new roles of IS executives (for example, House 1977, Burns 1978, Bass 1985, Howell and Frost 1989). The purpose of this research in progress is to identify the new role of IS executives based on this recent theoretical development in leadership literature. More specifically, in this proposed study we will investigate the appropriate leadership skills and personality needed for successful IS executives.

PREVIOUS STUDIES

Studies on IS Executives

Ives and Olson (1981) called for the study of the managerial role of IS executives. Synnott and Gruber (1981) used the term Chief Information Officer for the first time to emphasize the managerial role of IS executives. Rockart et al. (1982) predicted that future IS executives would be required to have an in-depth understanding of the business to complement their technical knowledge. Stephens et al. (1992) adopted a structured observation methodology employed by Minzberg (1973). In this CEO study which observed five CIOs, it was found that CIOs operated as executives rather than functional managers. Applegate and Elam (1992) compared newly appointed IS executives with established IS executives to identify new roles of IS executives. Their findings were consistent with that of Stephens et al. (1992).

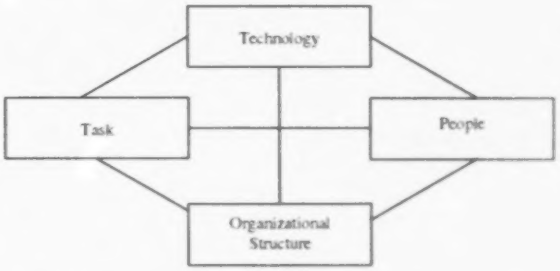
Even though these findings are all pointing to the fact that the role of IS executives is changing to accommodate the new role of IS in organizations, they don't specify what type of business or managerial skills would be appropriate for that position.

New Role of IT in Organizations

With the dramatic advances in computer hardware and software technology, now we can see more and more creative and innovative applications of IT in organizations. When the computer was introduced into the organization, only a few people thought it would change the way people work in organizations fundamentally. However, things have been changed since the mid 70's. With the revolutionary development in computer and telecommunication technologies, now we are seeing more creative and innovative ways of using IT in organizations. Furthermore, with these creative and innovative ways of using computers in organizations, we are now seeing fundamental changes in organizations under the impact of Information Technology (IT) which combines computers and communication technology.

FIGURE 1

LEAVITT'S DIAMOND



Leavitt's model of an organizational system, in which task, structure, people, and technology are interrelated and mutually adjusting, is helpful here. According to Leavitt's diamond, when technology is changed, other components of this diamond will respond to this change. To adjust themselves and to be effective there should be a "fit" among these four components. In this proposed study, we will focus on the "fit" between people, specifically IS executives, and the other variables of this model from the perspective of leadership behavior.

Charismatic Leader

In the mid 70's, there has been a major paradigm shift in the leadership area. With the mixed results of path-goal theory and other leadership research which mainly focused on the social exchange nature of leader-follower relationship, several leadership scholars started pay attention to the exceptional leaders who have extraordinary effects on their followers and eventually on social systems. According to Shamir et al. (1992), such leadership--alternatively called "charismatic", "visionary", and "transformation"--is claimed to affect followers in ways that are quantitatively greater and qualitatively different than the effects specified in past theories.

After an extensive review of literature in sociology, political science, and social psychology on "charismatic" leadership, House (1977) proposes "1976 theory of charismatic leadership". In that theory, he hypothesizes that leaders who have charismatic effects are differentiated from others by some combination of the four personal characteristics, such as dominance, self-confidence, need for influence, and a strong conviction in the moral rightness of his or her belief. Also, he hypothesized that charismatic leaders employ these characteristics with such behaviors as goal articulation, role modeling, personal image-building, demonstration of confidence and high expectation for followers, and motive arousal behaviors. Further, these behaviors enhance followers' trust, loyalty, and obedience to the leader which results in effective task performance if the aroused behavior is appropriate for their task demands.

Burns (1978) proposes the concept of "transformational leadership. In that, he defines transformational leadership as occurring when one or more persons engage with others in such a way that leaders and followers raise one another to a higher level of motivation and morality. Burns made distinctions between managers and leaders using leaders such as Gandhi and Roosevelt as examples.

Based on Burns' analysis of political leadership, Bass (1985) develops a model of leadership which generalized Burns' classification of transactional and transformation political leaders to a wide array of organizational settings. According to Bass, transformation leaders build on exchange relationship by developing, intellectually stimulating, and inspiring followers to transcend their own self-interests for a higher collective goal, while transactional leaders exchange rewards for services provided by followers.
House, Howell, Shamir, Smith, and Spangler (1993) expand House (1977) by incorporating the results of Shamir, House, and Arthur (1992) and House, Spangler, and Woycke (1991). Shamir, House, and Arthur (1992) provide a motivational explanation of effects of charismatic leader behaviors on followers' behaviors. On the other hand, House, Spangler, and Woycke (1991) embody the results of the personality research of McClelland and his associates into a charismatic leader behavior study. House et al. (1991) hypothesized that a certain personality profile, labeled the leadership motive profile, is related to charismatic leadership. Specifically, the charismatic leader is more likely to have a higher need for power, higher activity inhibition, and lower need for affiliation than the non-charismatic leader.

While the earlier theories describe leader behavior in terms of leader-follower exchange relationship, providing direction and support, and reinforcement behavior, the new leadership paradigm emphasizes symbolic leader behavior, visionary and inspirational ability, nonverbal communication, appeal to ideological values, intellectual stimulation of followers by the leader, high leader expectations for follower performance, high leader confidence in followers, and leader concern with her or his image in the eye of followers and other important constituents.

Further, the new theory argues that charismatic leaders transform organizations by infusing into them ideological values and moral purpose, thus inducting strong commitment rather than by affecting the cognition or the task environment of followers, or by offering material incentives and the threat of punishment.

Several studies have demonstrated empirical support for the theories of charismatic and/or transformation leadership. Sashikin, Rosenbach, Deal, and Peterson (1992) show that school principals who are transformational or visionary leader changed the culture of their school. They also reported that the students of those schools whose principals were identified as transformational or visionary showed higher

performance. In addition, they found that improvements in transformational leadership behavior would result in the perceived effectiveness of leaders' units.

Podsakoff, MacKenzie, Moorman, and Fetter (1990) show that transformational leader behavior has a positive impact on organizational citizenship behavior and the trust evidenced by subordinates moderates this relationship. In other words, they found that transformation leaders cause followers to do more than they are expected to do and perform beyond the level of expectation. This relationship, however, is indirect, rather than direct, in that it is mediated by followers' trust in their leader.

Halter and Bass (1988) show that transformation leader behavior obtained from the rating of their subordinates significantly differentiated top performing managers--identified as such through other sources, such as work-group performance criteria and ratings of superiors--from ordinary managers.

House, Spangler, and Woycke (1991) find that there are certain relationships between the presidential personality characteristics such as need for power, need for affiliation, and presidential power inhibition and performance and presidential charisma. Also they showed that there is a positive relationship between presidential performance and presidential charisma. In addition, they identified the positive relationship between presidential performance and presidential motives.

Howell and Higgins (1990) show that champions and non-champions in technological innovation can be differentiated on the basis of charismatic leader behaviors. Specifically, charismatic leadership behaviors that distinguish champions from non champions consist of expressing ideological goals, communicating confidence in others, displaying unconventional and innovative behaviors, showing environmental sensitivity, and displaying unconventional and innovative behaviors, showing environmental sensitivity, and displaying self-confidence.

Howell and Frost (1989) investigate the effects of charismatic leader behavior in controlled laboratory environments. They showed that under charismatic leaders, followers overcome group productivity norms and show higher task adjustment, task performance, and other necessary adjustments.

RESEARCH MODEL AND HYPOTHESES

Based on the preceding discussion the following hypotheses are developed to be tested.

H1a: IS executives who exhibit transformational leader behavior, that is, charisma, inspiration, intellectual stimulation, and individual consideration will be more effective than non transformational IS executives.

H1b: IS executives identified as "top performers" will be rated higher in transformational leadership factors than a randomly chosen group of "ordinary" IS executives.

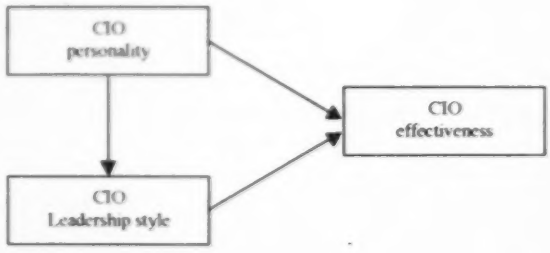
H2: Effective IS executives will exhibit higher achievement, persistence, innovativeness, persuasiveness, and risk taking than other IS executives.

H3: There will be a more positive relationship between personality dimensions and transformational leader behavior for effective IS executives than other IS executives.

The above theoretical arguments and supporting empirical evidences are combined into a single model of effective IS executives, shown Figure 2.

FIGURE 2

A GENERAL MODEL OF IS EXECUTIVE PERSONALITY, CHARISMATIC LEADERSHIP AND EFFECTIVENESS



RESEARCH METHODOLOGY

One of the potential weaknesses of this type of research is "same sample bias" which occurs when we use the same subjects to measure a set of different variables. Several steps will be taken to minimize this weakness. First, effective IS executive will be identified by peer review as well as review by a superior to whom IS executive usually reports. Secondly, leadership behavior will be assessed by direct subordinates who directly report to IS executive. Third, personality characteristics will be assessed directly by IS executives.

Path analysis using LISREL will be used to test our general model. Several additional statistical procedures will be employed to test the hypotheses.

MEASUREMENT

Leadership behavior

Leadership behavior will be determined using Bass's (1985) Multifactor Leadership Questionnaire.

Personality Characteristic

Three scales from the Jackson Personality Inventory (Jackson 1976) will be used for risk-taking, innovation, and social adroitness. In addition, we will use two scales from the Personality Research Form E (Jackson 1967) to measure achievement and endurance. Extensive empirical evaluation of these measures revealed a high internal consistency and test-retest reliability, minimal acquiescence and social desirability response biases, and adequate convergent and discriminate validity (Jackson 1967, 1976, 1977).

IS Executives Effectiveness

Measures to tap IS executives' effectiveness will be developed and tested. For the purpose of this proposed study, we will adapt the questionnaire from Halter and Bass(1988).

EXPECTED CONTRIBUTIONS

The expected contributions of this proposed study include: First, it is expected that we can identify appropriate leadership skills and personality characteristics for IS executives. This is a very important contribution to organizations because they can use our conclusions for guidance as they recruit IS executives.

Second, for the IS academician, this proposed study can help to build the messo theory of IS. Most of the existing IS studies can be categorized as either micro or macro research. While micro approaches focus on the impact of individual applications on individual people or a group of users, macro approaches focus on rather broad topics such as the strategic impact of IT structures. In micro studies it is hard to find organization and IT architecture, while in macro studies individual people and IT application hardly exist. There are few studies, if any, which truly combine these two approaches. This rather sharp distinction between these two different approaches becomes one of the major hurdles for building a concrete identity of IS research. To overcome this obstacle, we need to have a messo theory of IT which links micro and macro research. This proposed study is micro in the sense that its main focus is on the individual, CIO, in an organization and the impact of changes in IT on that individual. This proposed study is also macro as well, since the consequences of behavior of that individual has a significant impact on the organizations overall effectiveness. In other word, the unique position of CIO which connects individual IT into overall business performance allows us to build the messo theory of IS on the top of it.

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